




QUARTZ GLASS CRUCIBLE FOR PULLING UP SILICON SINGLE CRYSTAL AND ITS PRODUCTION

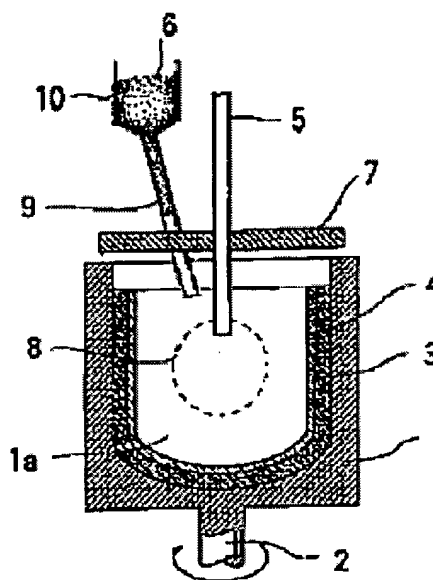
Patent number: JP5105577
Publication date: 1993-04-27
Inventor: MATSUMURA MITSUO; MATSUI HIROSHI
Applicant: SHINETSU QUARTZ PROD
Classification:
- **international:** C03B20/00; C03C3/06; C03C17/04; C30B15/10
- **european:** C03B19/09B; C30B15/10; C30B35/00B
Application number: JP19910093861 19910424
Priority number(s): JP19910093861 19910424; JP19900166252 19900625

Also published as:

 E P0463543 (A1)
 US 5174801 (A1)
 E P0463543 (B1)

Abstract of JP5105577

PURPOSE: To enable stable pulling-up of a high-quality silicon single crystal by forming the outer layer part of a glass crucible as a foam-rich quartz glass layer specified in the content of Na, K, Li and Al and forming the inner layer part of the crucible as a transparent glass layer specified in OH group content. **CONSTITUTION:** A rotating mold 1 is equipped with a rotating shaft 2 and a cavity 1a is formed in the mold 1. A foam-rich quartz glass crucible substrate body 3 constituting the outer layer part is arranged in the cavity 1a. In the substrate body 3, Na, K and Li contents are each ≤ 0.3 ppm and Al content is ≥ 5 ppm. Then, a heat source 5 is inserted into the substrate body 3 and heating is carried out. High temperature gas atmosphere 8 is formed in the crucible substrate body 3 by a heat source 5 and high-purity amorphous synthetic silica powder 6 is fed from a nozzle 9 into the high temperature gas atmosphere 8. Thereby the silica powder 6 is melted to form a transparent silica glass layer (inner layer part) being ≤ 200 ppm in the content of OH group.



Data supplied from the esp@cenet database - Worldwide

Best Available Copy